DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-008522
Date Inspected: 14-Aug-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Jose Salazar	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No ☑ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-1: 8/14/09
a111-1 Forging to a110-1 Base Plate
QA Inspector noticed this assembly 102A-1 had been previously placed in position and welder #O6, Mr. Tim O'Brian, was in process of performing submerged arc welding, on the d108 stiffener plate to ab106 stiffener plate, designated as weld joint # W1-113, in the flat position. QA Inspector noted that this weld joint was designated as a multi-pass 25mm fillet weld and verified Mr. O'Brian was currently qualified for this process/position. QA Inspector noted that Mr. O'Brian was utilizing OIW approved welding procedure specification (WPS 4020) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit. QA Inspector noticed QC Inspector Jose Salazar was present to monitor in-process welding parameters (amps/volts) and noted that Mr. Salazar had previously recorded in-process welding parameters of 620 amps and 34 volts, which appears to be in compliance with the applicable welding procedure specification and contract requirements.
QA Inspector noticed welder #M8, Mr. Jim Munsey, was in process of performing submerged arc welding, on the f108 a111-1 forging to d107 stiffener plate, designated as weld joint # W1-154, in the flat position. QA Inspector

noted that this weld joint was designated as AWS D1.5 TC-P5-S and verified Mr. Munsey was currently qualified for this process/position. QA Inspector noted that Mr. Munsey was utilizing OIW approved welding procedure specification (WPS 4016) and randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit. QA Inspector noticed QC Inspector Mike Gregson was present to monitor in-process welding parameters (amps/volts) and noted that Mr. Gregson had previously recorded in-process welding parameters of 480 amps and 29 volts, which appears to be in compliance with the applicable welding procedure specification and contract requirements.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)
Hinge-K Pipe Beam Fuse Assembly 120A-2: 8/14/09
a124-3 Half Fuse to a124-11 Half Fuse
QA Inspector noticed that the ESW stainless steel overlay passes were in-process, on this fuse assembly 120A-2. QA Inspector witnessed welder #F17, Mr. Igor Frolov performing electro slag welding (ESW) on the second layer welding passes, (approximately 50% complete), in the flat position, utilizing Soudokay brand Soudotape 316L stainless steel consumable strip. QA Inspector noted the first layer passes were previously completed utilizing the 309L consumable strip, per contract requirements. QA Inspector randomly noticed QC Inspector's Mike Gregson and Jose Salazar were present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that welding amps were recorded as 1200 amps/25 volts, travel speed at 279mm/min. and a pre-heat temperature recorded at 70 degrees Fahrenheit (20 C). QA Inspector verified Mr. Igor Frolov was currently qualified for this welding process/position and randomly recorded pre-heat temperatures of approximately 70 degrees Fahrenheit. QA Inspector noted that Mr. Igor Frolov appeared to be in compliance with the applicable approved welding procedure specification (WPS 7003). See attached picture below.

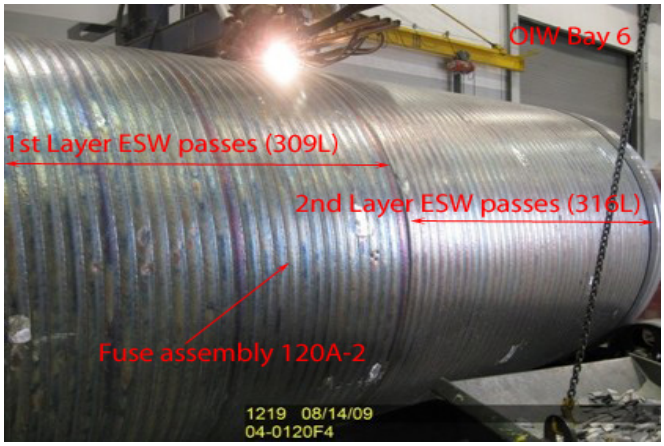
Koon-Hall Adrian Metallurgical: 8/14/09
PQR SSCS-013 and SSCS-014
QA Inspector received an inspection request (TL38), on this date, to witness the mechanical testing at Koon-Hall Adrian Metallurgical, in Portland, OR, on the previously welded PQR CS-079. QA Inspector arrived at KH and met with OIW welding engineer, Verne Taute and Mr. Taute explained that KH would be performing the following tests on the cut samples for these two PQR'S:
3 ea. Macroetch
4ea. Guided Bend
2ea. Tensile
3ea. Charpy
QA Inspector witnessed KH perform the macro, bend, charpy, tensile tests and KH explained to QA Inspector that the macro, bend, charpy and tensile tests, for the PQR CS-079, were in compliance with AWS D1.5. QA Inspector performed visual testing on the macroetch and guided bend samples and noted that these samples had no visible discontinuities; including cracks, lack of fusion, slag and porosity. QA Inspector noted that these samples appeared to be in compliance with AWS D1.5. QA Inspector was provided with all applicable testing reports and completed the applicable welding witness report (TL6032), on this date. See attached pictures below.

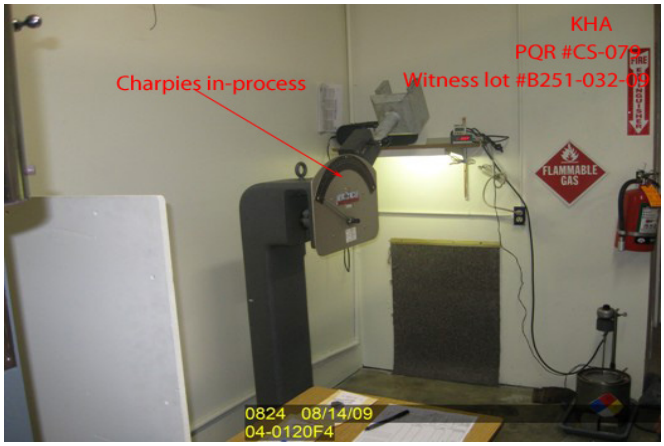
Material, Equipment, and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project.

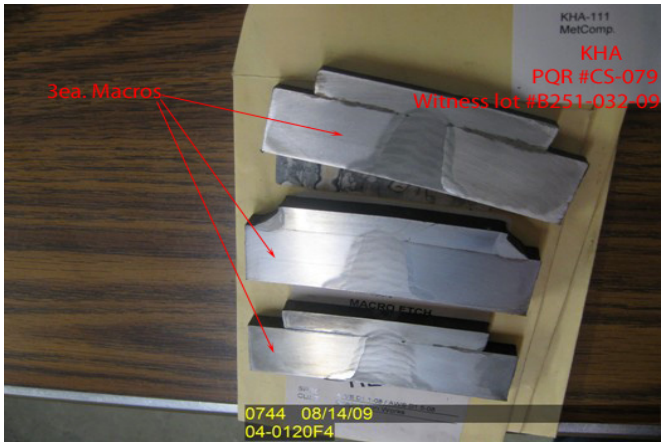
WELDING INSPECTION REPORT

(Continued Page 3 of 3)

The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors.







Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer